



PLANNING PROCESS: ISSUES, GOALS, RECOMMENDATIONS

Lower Boise River Basin Comprehensive Plan

Introduction

The Idaho Water Resource Board (Board) is responsible for the Comprehensive State Water Plan. *Idaho Code § 42-1734A* states that the Board, subject to legislative approval, will progressively formulate, adopt, and implement basin-specific plans for the conservation, development, management and optimum use of all unappropriated water resources and waterways of the state, in the public interest. Idaho Department of Water Resources staff, under the direction of the Board, assesses basin resources and develops basin plans that meet the goals of the Board and the needs of the public.

The lower Boise River basin planning process offers a number of complex challenges in meeting the needs and desires of many competing interests for water. Identification of these competing interests, issues, and concerns that basin residents have is necessary for developing relevant goals and objectives. Clear, specific goals and objectives are needed early in the planning process to:

- ◆ Guide and direct the planning effort;
- ◆ Provide stakeholders with expected outcomes of the planning process;
- ◆ Educate the public and interested parties about the complexities and conflicting nature of water uses in the basin;
- ◆ Allow the public and interested entities to participate in plan development;
- ◆ Ensure measurable outcomes of the plan.

The initial lower Boise River basin planning effort is outlined in Figure 1, and is summarized in this document.

Vision Statement for the Lower Boise River Basin Plan

The Lower Boise River Basin Comprehensive State Water Plan will support the sustainable future of the basin's ground and surface waters and related resources that are important to the residents of the basin and the state. The plan will include widespread public participation, utilize broad sources of information, and will be guided by criteria outlined in *§ 42-1734 A(1)(a-e)*.

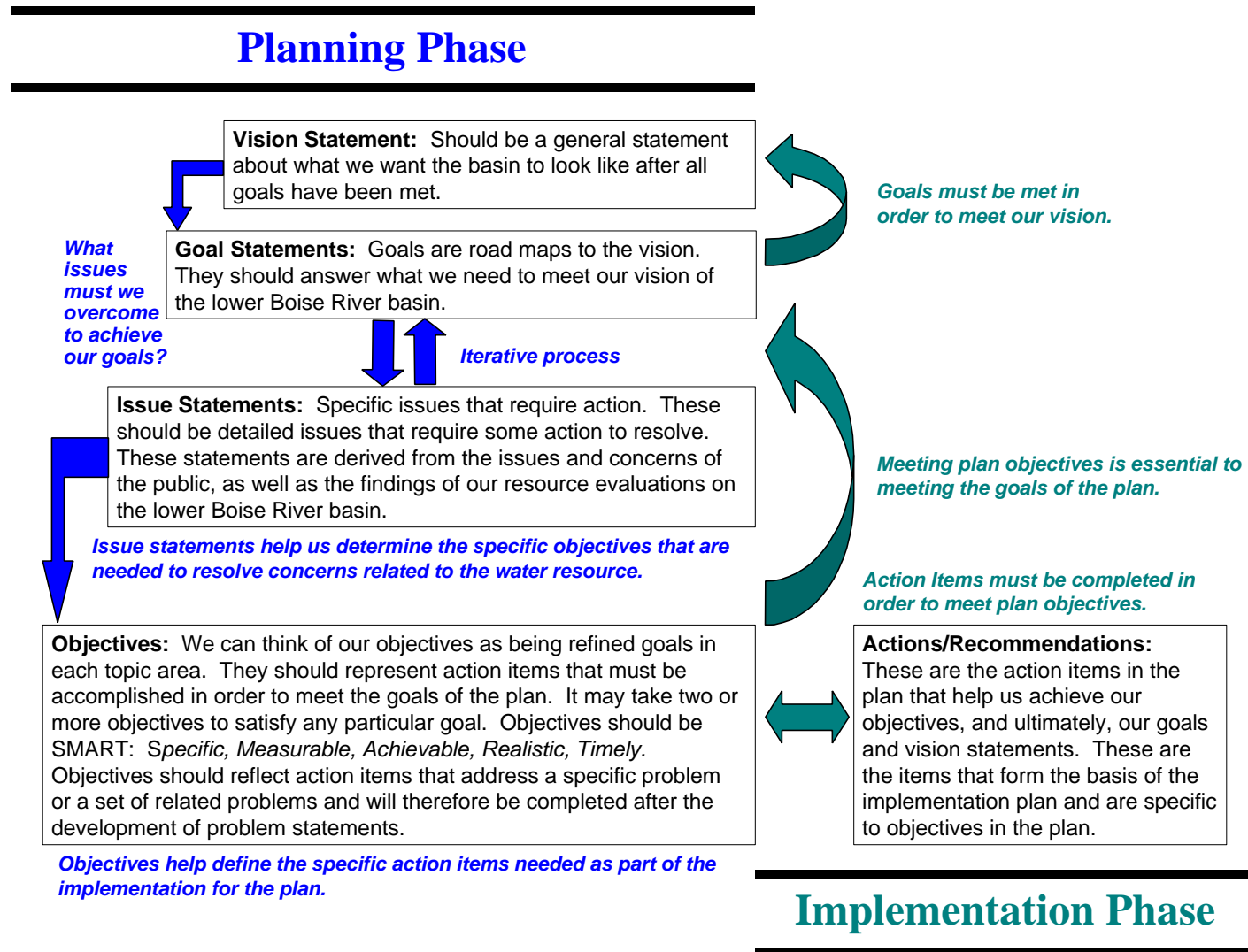


Figure 1. The development goals, issues statements, objectives, and actions for the lower Boise River basin involves two phases: planning and implementation.

Goals

Solicitation of Issues and Concerns

Preliminary planning in the lower Boise River basin began in early summer of 2000. The issues associated with water in the basin are complex, and many competing demands exist. For example, water is a public resource, yet it is distributed and sold in a variety of profit-generating livelihoods. Six major topic areas were identified through a series of public forums. These topic areas are:

- ◆ *Water Supply*: issues relating to the basin hydrologic cycle, including both ground and surface water;
- ◆ *Water Management*: issues pertaining to how water is distributed and managed to facilitate water use according to law;
- ◆ *Water Use*: issues pertaining to how domestic, commercial, municipal, industrial, agricultural and in-stream uses utilize water;
- ◆ *Impacts of Land Use Change on Water*: issues relating to growth and urbanization in the valley and how it affects water quantity, quality, and management;
- ◆ *Flood Management*: issues pertaining to the physical, biological, economic, and management aspects of flooding;
- ◆ *Water Quality*: issues relating to watershed conservation practices, minimization of pollution, and the protection of the beneficial uses of water.

An Advisory Group (AG) was formed in September 2000. The AG meets regularly to voice their concerns and issues regarding water and water management in the basin, and to help guide the planning process. AG members were selected from a pool of applicants having no specific affiliation to any interest group in the basin. Members ideally represent the average citizen whose opinions and concerns are not always captured in a large-group planning process.

Presently, groups of similar interest, called stakeholders (such as water users, environmental groups, governmental agencies, and elected officials), are being formed to provide additional guidance to plan development.

Public forums continue, and have been held several times in different locations in the basin. The AG, stakeholder groups, and public forum process together ensure broad public participation and capture a wide range of opinions about water use in the basin. To date, the AG and stakeholders were given a list of topic areas and asked for their concerns and issues regarding each category. Initial comments have been received from several stakeholder groups. The AG issues were collected during an interactive process. Concerns and issues were also solicited for the six topic areas at a public forum in March 2001, as well as through mailed questionnaires. The planning team will continue to solicit comments throughout the planning process.

Development of Goals

Comments from the Board and all interested parties were assigned to appropriate topic areas and then grouped into more specific categories. Issues were added based upon preliminary basin planning and assessment. All comments were received and grouped with similar ideas for several

areas of concern. Specific goals were then developed that would address the major concerns expressed:

- ◆ Educate the public, government agencies, and other interests about water resource issues and management challenges in the lower Boise River basin.
- ◆ Recognize and consider the varied interests and water uses.
- ◆ Utilize current collaborative efforts to optimize water use.
- ◆ Protect and preserve existing water rights and water policies.
- ◆ Encourage and support land use and in-stream practices to optimize water quantity and quality.
- ◆ Support adequate and safe water supplies for multiple uses.
- ◆ Develop and conserve multiple use water resources.
- ◆ Support innovative flood management activities.

Issue statements were synthesized based on goal statements and public input. *Water Supply, Water Management, and Water Use* were combined into a single topic area in the *Issues Statements* section. The four major areas of concern include: 1) water supply, management, and use; 2) impacts of land use change on water; 3) flood management; and 4) water quality. These are outlined below.

Issues

Water Supply, Management, and Use

Goals

- ◆ Protect and preserve existing water rights and assure that water policy is consistent with this fundamental principle.
- ◆ Encourage and support land use and in-stream practices and decisions that manage and optimize water use while conserving quantity and protecting quality.
- ◆ Recognize and consider the varied interests and water uses of the public in a fair and equitable manner when making decisions.
- ◆ Utilize collaborative efforts to seek more efficient solutions to water management that.
- ◆ Protect ground water quantity and quality.
- ◆ Implement multiple use development and conservation strategies.
- ◆ Educate the public, government agencies, and other interests about water resource issues in the lower Boise River basin.

ISSUE S1: CONJUNCTIVE MANAGEMENT OF GROUND AND SURFACE WATERS

Justification

- ♦ *42-1734A (1b):* Optimum economic development in the interest of and for the benefit of the state as a whole shall be achieved by integration and coordination of the use of water.
- ♦ *Idaho State Water Plan, Policy 1F, Conjunctive Management:* It is the policy of Idaho that where evidence of hydrologic connection exists between ground and surface waters, they are managed conjunctively in recognition of the interconnection

Although surface and ground water have been managed separately in the past in the lower Boise River basin, recent data have shown hydrologic connection of surface and ground water, particularly in the shallow system. An example is the lowering of ground water levels in southeastern Boise resulting in the creation of a Ground Water Management Area.

Many unanswered questions still exist about the degree of connection between surface and ground water. On-going research from the Treasure Valley Hydrologic Project (TVHP) will provide a better understanding of the water resources in the basin.

ISSUE S2: OPTIMUM USE OF GROUND WATER RESOURCES

Justification

- ♦ *Idaho State Water Plan, Policy 1H, Ground Water Withdrawal:* It is the policy of Idaho that average withdrawals from an aquifer should not exceed the reasonably anticipated rate of future recharge to that aquifer.

The preservation and protection of ground water supplies for human uses is essential to public health and welfare because 95% or more of our domestic supplies come from ground water. Of that number, about 25% of Idaho's population is served by private wells drawing water from a shallow ground water system (most municipal wells draw from a deep ground water system). In the lower Boise River basin, water from both the shallow and deep ground water systems is used for domestic purposes.

Significant advances have been made in recent years in characterizing the quantity and quality of both the deep and shallow aquifer systems. The TVHP, a cooperative effort between IDWR, University of Idaho, Bureau of Reclamation, and U.S. Geological Survey, is currently analyzing the entire aquifer system. In addition, water users and providers are working collaboratively, in some cases, to provide better solutions. An excellent example of this involves the Nampa-Meridian Irrigation District working with Micron Electronics to help provide surface water alternatives to replace ground water use for lawns and common areas. While surface water is used increasingly for urban domestic needs, the rural population in the basin still relies almost exclusively on ground water for meeting domestic needs.

Because of anticipated increases in water demands, more information is required to support informed decisions concerning ground water management in the basin. New and innovative ways to enhance availability (e.g., increased storage, recharge, and conservation) need to be

developed. Continued and expanded collection of data regarding the conditions of the ground water systems, such as is currently being done by the TVHP, is critical for management and planning.

ISSUE S3: INCENTIVES FOR WATER CONSERVATION

Justification

- ♦ *Idaho State Water Plan, Policy 1G, Reasonable Use:* It is the policy of Idaho to promote the reasonable use of water in accordance with state law.

- ♦ *Idaho State Water Plan Policy 1H, Ground Water Withdrawal:* It is the policy of Idaho that average withdrawals from an aquifer should not exceed the reasonably anticipated rate of future recharge to that aquifer.
Comment to Policy 1H, Ground Water Withdrawal: Excessive withdrawals of ground water may cause economic, environmental, and social issues nearly anywhere in the state. The state should seek to correct withdrawal/recharge imbalances in an orderly fashion, attempting to minimize negative impacts.

- ♦ *State Idaho State Water Plan, Policy 4H, Funding Program:* It is the policy of Idaho that state funds be available to support the development, preservation, conservation, and restoration of the water and related resources of the
Comment to Policy 4H, Funding Program: The Idaho Water Resource Board's Revolving Development Fund, the Water Management Account, and the Conservation and Development Trust are mechanisms for partially achieving the goals of this policy.

According to a September 2001 report by IDWR and others, forecasts of DCMI water use demonstrate substantial increases in future demand. Water demand could be reduced by improved water conservation efforts by water providers and users. Economic incentives and other procedures could be used to encourage DCMI water conservation. For example, water pricing or low-cost water saving devices could be improved to provide more incentives for water conservation. Non-DCMI conservation efforts should be guided by an understanding of the hydrologic system and reviewed to make sure they preserve existing water rights and support specific hydrologic goals. Because surface water diversions and furrow irrigation may contribute to ground water recharge, improving the efficiency of water delivery networks could have undesirable effects on the ground water system.

ISSUE S4: OPTIMAL WATER USE

Justification

- ♦ *Idaho State Water Plan, Policy 1G, Reasonable Use:* It is the policy of Idaho to promote the reasonable use of water in accordance with state law
Comment to Policy 1G, Reasonable Use: Excessive withdrawals of ground water may cause economic, environmental, and social issues nearly anywhere in the state.

The state should seek to correct withdrawal/recharge imbalances in an orderly fashion, attempting to minimize negative impacts.

- ♦ *Idaho State Water Plan, Policy II, Water Supply Bank:* It is the policy of Idaho that the sale or lease of water is critical to the efficient management of the state's water resources. Use of the State's Water Supply Bank shall be encouraged.
Comment from Policy II, Water Supply Bank: As the state approaches the situation where little or no water is available for new appropriations, the Water Supply Bank, established by 42-1761, affords an efficient mechanism for the sale or lease of water. By aggregating water available for lease, rental pools operating under the authority of the Water Supply Bank can supply the water needs of many potential users.

Future urban water demands will require a greater availability of surface water. To date, several changes in institutional arrangements have helped allow a shift in surface water use from agriculture to urban. Shifting water use from agriculture to urban will include water marketing practices. Existing water marketing takes place through the Water Supply Bank, which includes the rental pool, through transfers of water rights, and through irrigation district transactions. Current studies being carried out by the Bureau of Reclamation will provide needed information to assist in an effective conversion process. Streamlining the transfer and application process, providing more safeguards from forfeiture for existing water rights holders, and making provisions for protection in case of limited supply in the rental and exchange processes need to be explored.

ISSUE S5: WATER RECREATION

Justification:

- ♦ *42-1734A (Id):* Minimum stream flow for aquatic life, recreation and aesthetics and the minimization of pollution and the protection and preservation of waterways...and consideration shall be given to the development and protection of water recreation facilities
- ♦ *Comment from Idaho State Water Plan Policy 3A, Instream Flow:* The Idaho Water Resource Board supports efforts to obtain storage and natural flow rights to improve and maintain instream flows when in the public interest.
- ♦ *Idaho State Water Plan Policy 3C, State Protected River System:* It is the policy of Idaho that a state protected river system be maintained to meet the desires of the citizens of Idaho. The system should provide for the protection of the unique features that exist on various rivers within the state, and should provide the necessary authority and funding to protect such rivers and related lands for recreational, scenic, and natural values.

The river corridor and some of its tributaries attract many recreational users throughout the year. Recreational water resource uses are in demand and could be enhanced on selected portions of the lower Boise River. Enhancements could include boat courses, portage improvements, and better maintenance of access points. These improvements will require funding and other support.

Increased recreation on or near the river has consequences for sensitive habitat, in-stream degradation, water quality, private property rights, safety, and liability issues.

ISSUE S6: STREAMSIDE ACCESS

Justification

- ◆ *42-1734A (1d):* Minimum stream flow for aquatic life, recreation and aesthetics and the minimization of pollution and the protection and preservation of waterways...and consideration shall be given to the development and protection of water recreation facilities.
- ◆ *42-1734A (2c):* A Comprehensive State Water Plan shall contain: A description of the various existing and planned uses for these resources including currently undeveloped areas of the waterway and future plans for those areas, with a discussion of the advantages and disadvantages associated with each planned use.
- ◆ *42-1734A (2d):* A discussion of goals, objectives, and recommendations for improving, developing, or conserving the water resources and waterway or waterways in relation to these resources, including an examination of how different uses will promote the overall public interest, a statement as to the goals the plan expects to achieve, and an analysis of how any specific recommendations further those goals.
- ◆ *Idaho State Water Plan, Policy 3D, Riparian Habitat and Wetlands:* It is the policy of Idaho to protect the ecological viability of riparian habitat and wetlands within the state in the public interest

Native vegetation and wildlife are dispersed along the Boise River and its tributary corridors. Recreational trails have been developed adjacent to many of these waterways within or near city boundaries. In portions where no formal trails are established, numerous footpaths and other use areas have been created. These unofficial trails often impact sensitive habitat and private property and may contribute to over-use of areas.

ISSUE S7: WATER RESOURCE DATA

Justification

- ◆ *Idaho State Water Plan, Policy 1E, Water Measurement:* It is the policy of Idaho that the water resources of the state should be quantified and their uses should be measured.

Comment to Policy 1E, Water Measurement: Planning for the optimum use of the water resources of the state and optimal management requires adequate water supply assessment and water use measurement.

42-1805 lists as a duty of the Director of the Department of Water Resources preparation of a present and continuing inventory of the water resources of this state..... Water use quantification is essential for water resource planning.

Data collection, analysis and distribution by water users and agencies are crucial for management of current water use and for projections of future use. Data from various sources should be organized in a manner facilitating their future use. The public often comments that they are aware of data collection efforts by different agencies, but frequently do not see the results. Providing all interested parties with reasonable access to water resource information is beneficial. Better access to data also increases the public's confidence in water management entities to manage, develop, and protect ground and surface water. Security issues related to the data and data processing systems, as well as the sensitivity of the content, requires directed consideration.

ISSUE S8: PUBLIC OUTREACH

Justification

- ♦ *Comprehensive State Water Plan, North Fork Clearwater Basin, 1996, Public Education:* The local advisory group expressed concern that the public was not well aware of the CSWP and the water basin planning process...it was felt that a public information and education opportunity exists that needs to be pursued by the Board.

Information and education play a vital role in helping the public to understand issues related to water resources and water management. Support for planning and implementation of water resource projects is developed by informing the public about the need for particular actions within a watershed. Information and education efforts also provide the public with an opportunity to ask questions and provide input into plan formulation and implementation. Education efforts raise awareness about water resource issues and how the public can become involved in efforts to conserve and safeguard the water resource. Efforts like the Treasure Valley Water Summit and public information tasks in the TVHP should be continued.

ISSUE S9: COORDINATION AMONG AGENCIES

Justification

- ♦ *Idaho State Water Plan, Policy 4A, Agency Responsibilities:* It is the policy of Idaho that the responsibilities for administration and regulation of water quality allocations be discharged by the Department of Water Resources separate from the state agency primarily responsible for the administration and regulation of water quality. However, planning for water use and water quality should be integrated among state agencies by the Idaho Water Resource Board to the extent such integrated planning does not compromise the responsibilities of the individual state agencies, or state sovereignty over water allocation and use.

The complexities of natural resource management and planning have created challenges regarding coordination among entities with similar goals. In some instances, this has resulted in redundant and overlapping efforts. Water resource planning is no exception. Agencies and

private organizations may not review others' plans and projects, or are unaware of them. Improved coordination amongst agencies and departments would result in less redundancy and fewer information gaps, leading to greater public acceptance and reduced confusion.

ISSUE S10: VEGETATION IMPACTS ON HYDROLOGY (WATER SUPPLY AND MANAGEMENT)

Justification

- ♦ *421734A (1e): Watershed conservation practices consistent with sound engineering and economic principles shall be encouraged.*

Significant land surface changes, such as vegetation type and cover, influence a basin's **hydrology** and consequently the water supply. The lower Boise River basin contains about 425,700 acres of rangeland (50% of total area). Large areas of rangeland are transitioning from native sagebrush-steppe to annual grasslands due to both natural and man-made disturbances. These disturbances are allowing for large, frequent fires in the sagebrush-steppe communities, and ultimately minimize recovery of native species. In this ecological province, rangeland hydrology is often changed dramatically once the native vegetation is lost. Flooding and landslide risks are typically increased during certain seasons of the year as a result. Expensive recovery efforts on impacted rangelands are often necessary to reduce fire and flood risks within the basin.

Objectives

- ♦ Manage water resources conjunctively. (Issue S1)
- ♦ Enhance ground water availability. (Issue S2)
- ♦ Expand the collection and study of data of the ground water systems. (Issue S2)
- ♦ Encourage conservation measures consistent with sound hydrologic principles. (Issue S3)
- ♦ Improve the opportunities for water marketing. (Issue S4)
- ♦ Enhance responsible recreational opportunities on selected portions of the Boise River. (Issue S5)
- ♦ Expand services such as restrooms and trash removal, and restrictions for use of sensitive areas, including private property. (Issue S6)
- ♦ Protect the viability of sensitive riparian habitat. (Issue S6)
- ♦ Facilitate hydrologically defensible transition in water use between agriculture and DCMI to protect user rights. (Issue S4)
- ♦ Measure and report water use in a manner that facilitates its usability. (Issue S7)
- ♦ Improve water resources educational opportunities. (Issue S8)
- ♦ Identify a process that would coordinate efforts of organizations with similar water resource planning goals. (Issue S9)

- ♦ Assess trends in rangeland vegetation and how a successful reclamation effort will benefit the basin hydrology. (Issue S10)

Impacts of Land Use Change on Water

Goals

- ♦ Utilize current collaborative efforts to optimize water use.
- ♦ Protect and preserve existing water rights policies.
- ♦ Recognize and consider the varied interests and water uses.
- ♦ Encourage and support land use practices that protect water quality and quantity.
- ♦ Improve, develop, and conserve multiuse water resources and waterways.

ISSUE L1: URBANIZATION IMPACTS ON GROUND WATER

Justification

- ♦ *Idaho State Water Plan, Policy 1G, Reasonable Use:* It is the policy of Idaho to promote the reasonable use of water in accordance with state law.
- ♦ *Idaho State Water Plan, Policy 1H, Ground Water Withdrawal:* It is the policy of Idaho that average withdrawals from an aquifer should not exceed the reasonably anticipated rate of future recharge to that aquifer.

Spurred by population growth, urban development of agricultural land is continuing in the lower Boise River basin. Typically, new urban developments are supplied by individual or community wells, and rely primarily on the basin's shallow aquifer systems for potable water, and for irrigation of gardens, lawns and pastures. The shallow aquifer system is recharged primarily by surface water delivery and irrigation. This ground water system is threatened, by increased demand and loss of recharge from surface irrigation systems. New urban developments on agricultural land should use available surface irrigation water to water lawns and pastures. Installing surface water irrigation systems is constrained by the following: 1) high construction costs, and 2) access to delivery system canals and laterals.

ISSUE L2: USE OF THE BOISE RIVER AS A PUBLIC RESOURCE

Justification

- ♦ *Idaho State Water Plan, Policy 1B, Public Interest:* It is the policy of Idaho that water be managed with due regard for the public interest as established by law

The Boise River is a popular multiple use river. Examples of uses include recreation, irrigation, aesthetics, fish and wildlife, and DCMI. A large percentage of Idaho's population lies within a short distance of the river, making it an important and extensively used public resource. Most of the river frontage above the high water mark in urban areas is privately owned. Thus far, private

and public interests have worked well together to balance public access to the river while respecting private property. As development continues along the river corridor, however, there will be increasing conflicts between access to the river and private property rights. Balancing these will be critical.

ISSUE L3: AGRICULTURE TO URBAN LAND CONVERSION

Justification

- ♦ *Idaho State Water Plan, Policy 1G, Reasonable Use:* It is the policy of Idaho to promote the reasonable use of water in accordance with state law.
- ♦ *Idaho State Water Plan, Policy 3D, Riparian Habitat and Wetlands:* It is the Policy of Idaho to protect the ecological viability of riparian habitat and wetlands within the state in the public interest.

Urbanization increases conflicts with traditional agricultural uses within the lower Boise River basin. Notable concerns include maintenance, operation and delivery issues associated with canals and ditches in developed areas, safety concerns posed by irrigation water delivery systems and potential adverse water quality impacts to residential wellheads. Additionally, there can be significant increases in the amount of impervious surfaces (e.g., roofs, sidewalks, driveways, and roads) as homes, businesses, and other facilities are constructed in previously agricultural areas. This affects infiltration of water into the soil, especially locally, and increases the amount and speed at which runoff is delivered to receiving water bodies, such as rivers, drainage ditches, canals, and lakes. Previous studies suggest that storm-event peak flows to receiving waters will increase because of increases in impervious surfaces. Increased pressure will be put on existing storm-water disposal methods, and there is a potential to overload existing systems and drainage-ways, irrigation ditches, and canals.

Objectives

- ♦ Determine impacts of development on shallow ground aquifer levels (Issue L1)
- ♦ Encourage the use of surface water irrigation for irrigation of lawns, gardens and pastures. (Issue L1)
- ♦ Balance recreational access and protection of private property. (Issue L2)
- ♦ Address the water related issues facing urbanizing agricultural communities. (Issue L3)
- ♦ Provide more information about drainage requirements for local jurisdictions and adequate drainage provisions by local jurisdictions. (Issue L3)

Flood Management

Goal

- ◆ Support innovative flood management activities.

Flood management involves both regulation of flood flows (flood control), and land management practices in floodplains (floodplain management) to prevent or minimize the impacts of flood events. Increased development in recent years has occurred within the lower Boise River floodplain, and in the floodplains of tributary streams on the north side (foothills) and south side of the river. Communities within the 100-year floodplains participate in the National Flood Insurance Program, and have adopted floodplain management ordinances for regulation of development within these floodplains. Flood control structures have also been built to reduce the flood risk and minimize damage from floods. Flood control involves the use of constructed facilities (dams, levees, ponds), forecasting, and regulation of flood flows to prevent or minimize the effects of flood events. Floodplain management involves land management practices, mapping, ordinances, floodways and other measures to prevent or minimize the effects of flood water during flood events.

Floodplain Management

Flood damage can be limited by providing sufficient space in the flood plain to accommodate flood waters. Local government is encouraged to plan for floodways and protect floodplains from further development while prospective buyers could be made aware of identified flood prone areas. The pressures to develop areas subject to periodic flooding will continue to increase. Water frontage is very desirable.

The National Flood Insurance Program requires that local units of government zone and control flood prone areas in order to be eligible for most federal assistance.

ISSUE F1: FLOODPLAIN DEVELOPMENT AND FLOODING RISKS

Justification

- ◆ *Idaho State Water Plan, Policy 3I, Flood Prone Areas:* It is the policy of Idaho to encourage the protection of flood plains and reliance on management rather than structural alternatives in reducing or preventing flood damages.

Development in the lower Boise River and tributary stream floodplains has increased in recent years. The National Flood Insurance Program Floodplain Development Standards, and the community floodplain management ordinances are adhered to. Debris jams at bridges, culverts, and within the designated floodways may increase the flood level above planned elevations. In addition, the cumulative effect of development may increase the flood impacts to older developments both upstream and downstream of newer developments.

ISSUE F2: FLOODPLAIN DEVELOPMENT IMPACTS ON STREAM CHANNEL HYDROLOGY AND FLOODPLAIN BOUNDARIES

Justification

- ♦ *Idaho State Water Plan, Policy 3I, Flood Prone Areas*

Numerous changes to stream channels, floodplains and floodways along the Boise River have occurred during the past few years. The changes to these areas may have impacts to the flow within the river, and the timing and magnitude of flooding to downstream areas. Existing Flood Insurance Rate Maps developed for the National Flood Insurance Program are dated and may not reflect these changes.

ISSUE F3: IMPACTS OF GRAVEL DEPOSITION ON FLOW PATTERNS AND FLOODING RISKS

Justification

- ♦ *Idaho State Water Plan, Policy 3I, Flood Prone Areas*

The Boise River is a large gravel-bed river system. Typically, these systems can move large amounts of bed load material in response to high flows. Areas of decreased gradient represent areas of deposition along or in the stream channel. The accumulation of gravel may cause changes in stream channel hydrology. In the Boise River, gravel accumulates at the head of Eagle Island and has caused changes to the flow patterns in the north and south channels. These flow changes have resulted in increased flood risks as well as difficulty in delivering irrigation water to diversions from the south channel, north channel, and to Eagle Island.

ISSUE F4: FLOODING RISKS IN BOISE FRONT DRAINAGES

Justification

- ♦ *Idaho State Water Plan, Policy 3I, Flood Prone Areas*

Increase development in the Boise Front foothills and other land management practices, may increase the flood risk to property within these floodplains. Recent fires in the foothill watersheds have increased the flood risk due to increased runoff from burned slopes and changes in vegetation. Runoff from storm events may also be increased from impervious surfaces because of the cumulative impact of development.

ISSUE F5: REGULATED RIVER IMPACTS ON THE COTTONWOOD FOREST

Justification

- ♦ *Idaho State Water Plan, Policy 3I, Flood Prone Areas*

The cottonwood gallery forest, in its historic condition, was dominated by relatively young trees. The shape of the river's hydrograph plays an important role in shaping the channel and vegetation communities within the riparian area. Scour and fill activities of the river caused it to meander across the valley bottom, destroying older trees but creating habitat for the emergence of new cottonwoods. Regulated flows in the Lower Boise River are more stable than historic

flows. The development in the Treasure Valley has contributed to changes in the cottonwood gallery forest that once lined the Boise River. Some of these changes are reflected by an increase in non-native tree occurrences, as they replace cottonwoods along the river corridor.

Flood Control

The Idaho State Water Plan policy states that the only standards applicable to the construction of flood control levees in Idaho are in the Rules governing Stream Channel Alterations. These standards apply only when all or part of the levee will be located below the mean high water mark.

The responsibility for maintaining flood control levees belongs to local entities. There are no **state** maintenance regulations so the degree of maintenance varies with the capability and diligence of the responsible organization. All new flood control levees could be built to standards promulgated by administrative rules. The authorized agency could develop maintenance criteria for flood control levees and insure compliance with these criteria through an inspection program. When a levee is scheduled to be rebuilt, a cost/benefit analysis could be conducted to determine if it is prudent to rebuild the levee in question or acquire the property the levee would protect.

ISSUE F6: INFRASTRUCTURE AND DEVELOPMENT RISKS WITHIN THE BOISE RIVER FLOODPLAIN

Justification

- ♦ *Idaho State Water Plan, Policy 3I, Flood Prone Areas*

Development within the Boise River floodplain may be at risk from flood events that have a magnitude greater than what the existing flood control system can control. On average, the upstream storage reservoirs are able to regulate flood flows down to about 7,200 cfs, a 26-year recurrence interval. Flood stage on the Boise River is considered 7,000 cfs at the Glenwood Bridge Gage. This level was reached or exceeded seven times since the completion of Lucky Peak Dam in 1953.

ISSUE F7: BOISE RIVER LEVEES

Justification

- ♦ *Idaho State Water Plan, Policy 3J, Flood Control Levee Operation:* It is the policy of Idaho that the construction and maintenance of flood control levees be regulated by the State.

Many levees along the Boise River have been constructed to prevent damage from floods. While some levees have been built to Corps of Engineers standards, others have not. In some cases, unauthorized levees have been built that do not meet appropriate construction standards. Flood control levees are owned and maintained by local entities and private interests. Levees need to be properly maintained to protect life and property.

ISSUE F8: FLOOD CONTROL DISTRICTS

Flood Control Districts are authorized by the Idaho Legislature for the purpose of protection of life and property from floods. The Districts may establish reservoirs, dams, levees, dikes, alterations to existing waterways, or rivers, and the removal of natural obstructions within the waterways. The two Flood Control Districts (10 & 11) in the lower Boise River basin have focused on removal of debris from the river channel. The Districts have limited budgets and development adjacent to the river is increasing the demand for debris removal and bank stabilization projects. These efforts should be coordinated with fish and wildlife management authorities to improve or minimize impacts to habitat, and to consider the cumulative impacts of stream channel alteration.

Objectives

- ◆ To present existing floodplain management programs in the lower Boise River valley. (Issue F1)
- ◆ To address the effectiveness of existing flood control facilities and operations for the lower Boise River, and develop alternatives for increased flood protection. (Issue F6)
- ◆ To review floodplain management and flood control facilities in the tributaries on the north side (foothills), and south side of the river. (Issue F4)

ISSUE: Water Quality

Goals

- ◆ Encourage and support practices that optimize water quantity and quality.
- ◆ Support adequate and safe water supplies.
- ◆ Educate the public, government agencies, and other interests about water resources.

ISSUE Q1: SURFACE WATER QUALITY

Justification

- ◆ *Idaho State Water Plan, Policy 1L, Water Quality:* It is the policy of Idaho that water be protected against unreasonable contamination or deterioration in quality, thereby maintaining designated beneficial uses.
- ◆ *Idaho State Water Plan, Policy 1C, Beneficial Use of Water:* It is the policy of Idaho that beneficial uses include certain nonconsumptive water uses.
- ◆ *Idaho State Water Plan, Policy 1B, Public Interest:* It is the policy of Idaho that water be managed with due regard for the public interest as established by state law.
- ◆ *Idaho State Water Plan, Policy 2A, Species of Concern:* It is the policy of Idaho that the public interests be considered when decisions are made to maintain sustainable

populations of plant and animal species whose existence is threatened by mankind's actions.

- ♦ *Idaho State Water Plan, Policy 3D, Riparian Habitat and Wetlands:* It is the policy of Idaho to protect the ecological viability of riparian habitat and wetlands within the state in the public interest.
- ♦ *Idaho State Water Plan, Policy 3A, Instream Flow:* It is the policy of Idaho that when it is in the public interest the Idaho Water Resource Board should seek to appropriate waters in the state for instream flow purposes.

Water quality of the Boise River is highly variable from its outlet at Lucky Peak Reservoir to its confluence with the Snake River. Land development, road construction, urban runoff, reservoir operations, wastewater treatment facilities, river channelization, and agriculture affect the river from Lucky Peak Dam to its mouth.

There are currently fourteen river/tributary segments or water bodies in the basin that are considered water-quality limited. In Year 2000, the EPA approved a TMDL (Total Maximum Daily Load) for the lower Boise River for sediment and bacteria. Nutrient and temperature TMDLs have not been completed. The TMDL implementation plan is being developed, with guidance from the lower Boise River Watershed Advisory Group (WAG), to help restore the river's designated beneficial uses.

State designated beneficial uses for the lower Boise River include support of cold and warm water biota and salmonid spawning. Streamside development, regulated hydrographs, flood management practices, and stream channelization may affect habitat.

ISSUE Q2: PROTECTION OF GROUND WATER RESOURCES

Justification

- ♦ *42-1734A (1a):* Adequate and safe water supplies for human consumption and maximum supplies for other beneficial uses shall be preserved and protected
- ♦ *Idaho State Water Plan, Policy 1L, Water Quality:* It is the policy of Idaho that water be protected against unreasonable contamination or deterioration in quality, thereby maintaining designated beneficial uses.

There are two primary aquifer systems underlying the lower Boise River basin -- the local shallow aquifer system and the regional deep aquifer system. The shallow ground water system is located in coarse sand and gravels, and largely results from the long history of surface-irrigated agriculture in the valley. The water quality of the shallow system is generally suitable for domestic purposes, although large areas have been impacted by human activities. The deeper, regional ground-water system currently contains water of high quality. Less is known about the deep aquifer but recent studies stress the importance of protecting this system from potential sources of contamination.

Residential and commercial development has increased in the lower Boise River basin over the last fifty years. Much of this development is occurring on formerly irrigated cropland in the valley bottom. While 70% of formerly irrigated agricultural lands have been converted to residential or urban use since 1939, there has been an overall net increase in total acres of irrigated agricultural lands (in other words, as irrigated ag lands are urbanized, new ag lands are developed at the margins of existing cultivated ground). Changing land uses have associated water quality issues as well, including:

- a) Many rural residents and subdivisions utilize individual wells for their domestic water supply. Aquifer contamination can occur from poor well siting and construction activities.
- b) Many rural subdivisions utilize septic systems for sewage treatment and disposal. Leaching of contaminants into ground water from these systems is a concern. This is especially an issue for nitrate-nitrogen, because most conventional septic systems do not remove nitrogen efficiently. Aging, inappropriate, or poorly managed septic systems create an even greater risk of contamination. Large areas of the basin have been designated as Nitrate Priority Areas by IDEQ.
- c) Recent regulations provide for lot spacing to protect wells from individual septic systems. Older subdivisions and rural homes may not have appropriate spacing.
- d) Inadequately monitored shallow *injection wells* that handle urban stormwater, or poor placement of agricultural drains, may threaten the shallow aquifer.
- e) Urban and rural land owners apply fertilizers and pesticides to maintain the aesthetics of their home sites or aid in production of crops and livestock. Proper application and timing of chemical and fertilizer usage needs to be encouraged.

ISSUE Q3: WATER QUALITY INFORMATION AND EDUCATION

Justification

- ♦ *Idaho State Water Plan, Policy 4G, Research Program:* It is the policy of Idaho to encourage and conduct research on important water resource topics.

Data collection is essential for analysis and monitoring of both surface and ground water. Past and present monitoring efforts in the lower Boise River basin have provided data that assisted in locating areas of ground water problems. Adequate monitoring and data collection is important to protect public health and safety, prevent large-scale contamination of ground and surface water, and to monitor trends. Ongoing data collection efforts, such as the Treasure Valley Hydrologic Project and the Statewide Monitoring Network, should be continued and data gaps filled as they are identified.

The public continues to express interest and concern about water quality issues. They want to understand how they impact water quality in the lower Boise River basin so that they can be more proactive.

Objectives

- ◆ Implement land-use practices and that minimize impact on surface waters. (Issue Q1)
- ◆ Support the protection and preservation of critical plant and animal communities. (Issue Q1)
- ◆ Ensure that reasonable and appropriate beneficial uses are protected. (Issue Q1)
- ◆ Minimize impacts to ground water quality. (Issue Q2)
- ◆ Expand water quality research and education opportunities. (Issue Q3)